

### ABSTRACT OF THE DISCLOSURE

[0067] A device for accessing biological fluid, sampling biological fluid constituents and determining the concentration of at least one target constituent within the accessed biological fluid is provided. The device has at least one micro-piercing member used to penetrate the skin to a selected depth and to access biological fluid, a constituent sampling means and a constituent measuring means. The constituent sampling means comprises a constituent transfer medium, such as a hydrophilic gel material, by which sampled constituents are transferred from the micro-piercing member to the measuring means. The measuring means includes an electrochemical cell having at least one porous electrode through which at least one sampled constituent is caused to enter into the electrochemical cell. Methods of sampling constituents within the skin and measuring the sampled constituents, as well as kits for practicing the invention are provided.